What is claimed is:

1. An exposure method which processes an optical proximity correction to an exposure data having a plurality of exposure patterns and exposes a substrate in accordance with the corrected exposure data, the method comprising:

a correction processing step of converting an exposure pattern to be corrected, which is subject to an optical proximity effect, of the plurality of exposure patterns, into a minus objective pattern and a minus pattern to be deleted from the minus objective pattern, to generate the corrected exposure data;

a bitmap processing step of deleting the minus pattern from the minus objective pattern of the corrected exposure data, to bitmap the corrected exposure pattern; and

an exposure step of exposing the substrate in accordance with the bitmapped corrected exposure pattern.

2. The exposure method according to claim 1, wherein

in the case of the optical proximity correction for preventing corners of the exposure pattern from being rounded, the exposure pattern to be corrected is converted, in the correction processing step, into the minus objective pattern which is an enlarged one of the exposure pattern to be corrected and into the minus pattern

positioned at center on sides of the minus objective pattern.

3. The exposure method according to claim 1, wherein in the case of the optical proximity correction for preventing an enlargement at position confronting adjacent other pattern in a linear exposure pattern, the exposure pattern to be corrected is converted, in the correction processing step, into the minus objective pattern consisting of the exposure patterns to be corrected and the minus pattern at the position confronting the adjacent other pattern.

4. The exposure method according to claim 1, wherein in the correction processing step, if the number of patterns after conversion is smaller in a second optical proximity correction processing for converting the exposure pattern to be corrected into the minus objective pattern and the minus pattern, than in a first optical proximity correction processing for converting the exposure pattern to be corrected into a plurality of division exposure patterns obtained by dividing the corrected exposure patterns after the optical proximity correction, then the second optical proximity correction processing is carried out, and wherein if the number of patterns after conversion is greater in the second optical proximity correction processing than in the first optical

proximity correction processing, then the first optical proximity correction processing is carried out.

5. An exposure system which processes an optical proximity correction to an exposure data having a plurality of exposure patterns and exposes a substrate in accordance with the corrected exposure data, the system comprising:

a correction processing unit which converts an exposure pattern to be corrected which is subject to an optical proximity effect, of the plurality of exposure patterns, into a minus objective pattern and a minus pattern to be deleted from the minus objective pattern, to thereby the generate corrected exposure data;

a bitmap processing unit which deletes the minus pattern from the minus objective pattern of the corrected exposure data to bitmap the corrected exposure pattern; and

an exposure unit for exposing the substrate in accordance with the bitmapped correction exposure pattern.

6. The exposure system according to claim 5, wherein

in the case of the optical proximity correction for preventing corners of the exposure pattern from being rounded, the correction processing unit converts the pattern to be corrected, into the minus objective pattern

which is an enlarged one of the exposure pattern to be corrected and into the minus pattern positioned at center on sides of the minus objective pattern.

7. The exposure system according to claim 5, wherein in the case of the optical proximity correction for preventing an enlargement at position confronting adjacent other pattern in a linear exposure pattern, the correction processing unit converts the exposure pattern to be corrected, into the minus objective pattern consisting of the exposure pattern to be corrected and into the minus pattern at position confronting the adjacent other pattern.

8. The exposure system according to claim 5, wherein the correction processing unit, if the number of patterns after conversion is smaller in the second optical proximity correction processing for converting the exposure pattern to be corrected into the minus objective pattern and the minus pattern, than in the first optical proximity correction processing for correcting the exposure pattern to be corrected into the plurality of division exposure patterns obtained by dividing the correction exposure patterns after the optical proximity correction, carries out the second optical proximity correction processing; and the correction processing unit, if the number of patterns after conversion is greater in

the second optical proximity correction processing than in the first optical proximity correction processing, carrying out the first optical proximity correction processing.

9. An exposure data processing apparatus which processes an optical proximity correction to an exposure data having a plurality of exposure patterns, to generate a corrected exposure data, comprising:

a correction processing unit for converting an exposure pattern to be corrected, which is subject to an optical proximity effect, of the plurality of exposure patterns, into a minus objective pattern and a minus pattern to be deleted from the minus objective pattern, to generate the corrected exposure data.

10. The exposure data processing apparatus according to claim 9, wherein

in the case of the optical proximity correction for preventing corners of the exposure pattern from being rounded, the correction processing unit converts the pattern to be corrected into the minus objective pattern which is an enlarged one of the exposure pattern to be corrected and into the minus pattern positioned at center on sides of the minus objective pattern.

11. The exposure data processing apparatus according to

claim 9, wherein

in the case of the optical proximity correction for preventing an enlargement at position confronting adjacent other pattern in a linear exposure pattern, the correction processing unit converts the exposure pattern to be corrected into the minus objective pattern consisting of the exposure pattern to be corrected and into the minus pattern at position confronting the adjacent other pattern.

12. The exposure data processing apparatus according to claim 9, wherein

the correction processing unit, if the number of patterns after conversion is smaller in a second optical proximity correction processing for converting the exposure pattern to be corrected into the minus objective pattern and the minus pattern, than in a first optical proximity correction processing for converting the exposure pattern to be corrected into a plurality of division exposure patterns obtained by dividing the correction exposure patterns after the optical proximity correction, carries out the second optical proximity correction processing; and the correction processing unit, if the number of patterns after conversion is greater in the second optical proximity correction processing than in the first optical proximity correction processing, carries out the first optical proximity correction

processing.

13. An exposure apparatus for exposing a substrate to exposure patterns, in accordance with exposure data, comprising:

a bitmap processing unit which inputs a corrected exposure data obtained by converting an exposure pattern to be corrected which is subject to an optical proximity effect, into a minus objective pattern and a minus pattern to be deleted from the minus objective pattern, and deletes the minus pattern from the minus objective pattern to bitmap a corrected exposure pattern; and

an exposure unit for exposing the substrate in accordance with the bitmapped corrected exposure pattern.